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APPLICATION NO	).	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.	
10/741,657	Ī	12/19/2003	Debbie Ļaw	05882.0177.NPUS01	6189	
27194	7590	08/24/2006		EXAMINER		
HOWRE'			RAWLINGS, STEPHEN L			
		ING DEPARTMEN' PARK DRIVE, SUI		ART UNIT	PAPER NUMBER	
		I, VA 22042-2924		1643 DATE MAILED: 08/24/2006		

Please find below and/or attached an Office communication concerning this application or proceeding.

.S. Patent and Trademark Office					
Attachment(s)  1) Notice of References Cited (PTO-892)  2) Notice of Draftsperson's Patent Drawing Review (PTO-948  3) Information Disclosure Statement(s) (PTO-1449 or PTO/SE Paper No(s)/Mail Date	9) Pa (3/08) 5) 🔲 No	erview Summary (PTO-413) per No(s)/Mail Date tice of Informal Patent Application (PTO ner:	-152)		
Attachment(s)					
* See the attached detailed Office action for a	list of the certified copi	es not received.			
application from the International Bu					
3. Copies of the certified copies of the	priority documents have	been received in this National	Stage		
2. Certified copies of the priority docum					
1.☐ Certified copies of the priority documents	nents have been receive	ed.			
a) ☐ All b) ☐ Some * c) ☐ None of:	eigh phonty under 33 U	o.o. y 113(a)-(u) 01 (1).			
12) Acknowledgment is made of a claim for for	eian priority under 35 U	S.C. & 119(a)-(d) or (f)			
Priority under 35 U.S.C. § 119					
11)☐ The oath or declaration is objected to by th	e Examiner. Note the a	tached Office Action or form PT	O-152.		
Replacement drawing sheet(s) including the co	rrection is required if the o	rawing(s) is objected to. See 37 CF	R 1.121(d).		
Applicant may not request that any objection to					
10) The drawing(s) filed on is/are: a)		ted to by the Examiner.			
9) The specification is objected to by the Exa	miner.				
application Papers					
8) Claim(s) <u>1-70</u> are subject to restriction and	d/or election requiremer	t.			
7) Claim(s) is/are objected to.					
6) Claim(s) is/are rejected.					
5) Claim(s) is/are allowed.	iciami nom considerati	v···			
4a) Of the above claim(s) is/are with		on.			
4)⊠ Claim(s) <u>1-70</u> is/are pending in the applica	ation				
Disposition of Claims					
closed in accordance with the practice und	der <i>Ex par</i> te Qua <i>yl</i> e, 19	35 C.D. 11, 453 O.G. 213.			
Since this application is in condition for allowance except for formal matters, prosecution as to the merits is					
2a)☐ This action is <b>FINAL</b> . 2b)☐	This action is non-final.				
1) Responsive to communication(s) filed on	26 July 2006.				
Status					
WHICHEVER IS LONGER, FROM THE MAILIN  - Extensions of time may be available under the provisions of 37 CF after SIX (6) MONTHS from the mailing date of this communicatio  - If NO period for reply is specified above, the maximum statutory p  - Failure to reply within the set or extended period for reply will, by s Any reply received by the Office later than three months after the rearned patent term adjustment. See 37 CFR 1.704(b).	G DATE OF THIS CON FR 1.136(a). In no event, howeven. eriod will apply and will expire SIX statute, cause the application to be	MUNICATION. , may a reply be timely filed  (6) MONTHS from the mailing date of this co come ABANDONED (35 U.S.C. § 133).			
A SHORTENED STATUTORY PERIOD FOR RI	EPLY IS SET TO EXPIR	RE <u>1</u> MONTH(S) OR THIRTY (30	D) DAYS,		
The MAILING DATE of this communication Period for Reply	i appears on the cover s	төөк with the correspondence add	uress		
The MAN INC DATE of the	Stephen L. Rawling		duana		
Office Action Summary	Examiner	Art Unit			
	10/741,657	LAW ET AL.			
	1	Applicant(s)			

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## **DETAILED ACTION**

1. The amendment filed July 26, 2006, is acknowledged and has been entered. Claims 3-5, 27, 45, 47, 62, 66, and 69 have been amended. Claim 70 has been added.

2. Claims 1-70 are pending in the application and are currently subject to restriction.

## Election/Restrictions

3. Restriction to one of the following inventions is required under 35 U.S.C. 121:

Group I. Claims 1-16, insofar as the claims are drawn to an antibody that competitively inhibits binding of a GRP64 polypeptide to antibody GPR64-18, or a composition thereof, classified, for example, in class 530, subclass 387.1.

Group II. Claims 1-16, insofar as the claims are drawn to an antibody that competitively inhibits binding of a GRP64 polypeptide to antibody GPR64-81, or a composition thereof, classified, for example, in class 530, subclass 387.1.

Group III. Claims 1-16, insofar as the claims are drawn to an antibody that competitively inhibits binding of a GRP64 polypeptide to antibody GPR64-93, or a composition thereof, classified, for example, in class 530, subclass 387.1.

Group IV. Claims 1-16, insofar as the claims are drawn to an antibody that competitively inhibits binding of a GRP64 polypeptide to antibody GPR64-101, or a composition thereof, classified, for example, in class 530, subclass 387.1.

Group V. Claims 17-24, insofar as the claims are drawn to a method for detecting ovarian cancer in a biological sample from a patient, said method comprising contacting the sample with an antibody that competitively inhibits

binding of a GRP64 polypeptide to antibody GPR64-18, classified, for example, in class 435, subclass 7.23.

Group VI. Claims 17-24, insofar as the claims are drawn to a method for detecting ovarian cancer in a biological sample from a patient, said method comprising contacting the sample with an antibody that competitively inhibits binding of a GRP64 polypeptide to antibody GPR64-81, classified, for example, in class 435, subclass 7.23.

Group VII. Claims 17-24, insofar as the claims are drawn to a method for detecting ovarian cancer in a biological sample from a patient, said method comprising contacting the sample with an antibody that competitively inhibits binding of a GRP64 polypeptide to antibody GPR64-93, classified, for example, in class 435, subclass 7.23.

Group VIII. Claims 17-24, insofar as the claims are drawn to a method for detecting ovarian cancer in a biological sample from a patient, said method comprising contacting the sample with an antibody that competitively inhibits binding of a GRP64 polypeptide to antibody GPR64-101, classified, for example, in class 435, subclass 7.23.

Group IX. Claims 25-28, drawn to an antibody comprising SEQ ID NO: 17 and/or SEQ ID NO: 18, or a composition thereof, classified, for example, in class 530, subclass 387.1.

Group X. Claim 29, drawn to a method for detecting ovarian cancer in a biological sample from a patient, said method comprising contacting the sample with an antibody comprising SEQ ID NO: 17 and/or SEQ ID NO: 18, classified, for example, in class 435, subclass 7.23.

Group XI. Claim 30, drawn to a method for inhibiting the proliferation of an ovarian cancer-associated cell, said method comprising contacting the cell with an antibody comprising SEQ ID NO: 17 and/or SEQ ID NO: 18, classified, for example, in class 435, subclass 375.

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Group XII. Claims 31-42, 46, 60, and 61, drawn to a monoclonal antibody, or composition thereof, that binds a polypeptide comprising a sequence that is at least 80% homologous to the sequence of SEQ ID NO: 2 spanning positions 1 and 588, or a hybridoma producing said antibody, classified, for example, in class 530, subclass 388.2 or class 435, subclass 330.

Group XIII. Claim 43, drawn to a host cell producing an antibody that binds a polypeptide comprising a sequence that is at least 80% homologous to the sequence of SEQ ID NO: 2 spanning positions 1 and 588, classified, for example, in class 435, subclass 69.1.

Group XIV. Claim 44, insofar as the claim is drawn to a monoclonal antibody that binds the same epitope of GRP64 as antibody GRP64-18, classified, for example, in class 530, subclass 387.1.

Group XV. Claim 44, insofar as the claim is drawn to a monoclonal antibody that binds the same epitope of GRP64 as antibody GRP64-101, classified, for example, in class 530, subclass 387.1.

Group XVI. Claims 44 and 45, insofar as the claims are drawn to a monoclonal antibody that binds the same epitope of GRP64 as antibody GRP64-81, classified, for example, in class 530, subclass 387.1.

Group XVII. Claims 44 and 45, insofar as the claims are drawn to a monoclonal antibody that binds the same epitope of GRP64 as antibody GRP64-93, classified, for example, in class 530, subclass 387.1.

Group XVIII. Claims 47 and 62, insofar as the claim is drawn to hybridoma cell line having the ATCC deposit number PTA-5703 (i.e., hybridoma OAM6#81), or a composition comprising an antibody produced by said cell line, classified, for example, in class 435, subclass 330, or class 530, subclass 387.1.

Group XIX. Claim 47 and 62, insofar as the claim is drawn to hybridoma cell line having the ATCC deposit number PTA-5704 (i.e., hybridoma OAM6#93), or a composition comprising an antibody produced by said cell line, classified, for example, in class 435, subclass 330, or class 530, subclass 387.1.

Group XX. Claims 48-59, drawn to a method for inhibiting the growth of tumor cells, said method comprising administering to a mammal an antibody capable of binding a polypeptide comprising a sequence that is at least 80% homologous to the sequence of SEQ ID NO: 2 spanning positions 1 and 588, classified, for example, in class 424, subclass 181.1.

Group XXI. Claims 63-65, drawn to a method for diagnosing a tumor in a mammal, said method comprising contacting a test sample obtained from the mammal with an antibody that binds a polypeptide comprising a sequence that is at least 80% homologous to the sequence of SEQ ID NO: 2 spanning positions 1 and 588, classified, for example, in class 435, subclass 7.23.

Group XXII. Claims 66-70, drawn to a method for producing high serum titers of specific antibodies to cell surface receptor proteins, classified, for example, in class 424, subclass 184.1.

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4. The inventions are distinct, each from the other because of the following reasons:

The inventions of Groups I-IV, IX, and XII-XIX are products, whereas the inventions of Groups V-VIII, X, XI, and XX-XXII are processes.

The inventions of Group I and the inventions of Groups VI-VIII, X, XI, and XX-XXII are unrelated because the products of Group I are not specifically used or otherwise involved in the processes of Groups VI-VIII, X, XI, and XX-XXII.

The inventions of Group II and the inventions of Groups V, VII, VIII, X, XI, and XX-XXII are unrelated because the products of Group II are not specifically used or otherwise involved in the processes of Groups V, VII, VIII, X, XI, and XX-XXII.

The inventions of Group III and the inventions of Groups V, VI, VIII, X, XI, and XX-XXII are unrelated because the products of Group III are not specifically used or otherwise involved in the processes of Groups V, VI, VIII, X, XI, and XX-XXII.

The inventions of Group IV and the inventions of Groups V, VII, VII, X, XI, and XX-XXII are unrelated because the products of Group IV are not specifically used or otherwise involved in the processes of Groups V, VII, VII, X, XI, and XX-XXII.

The inventions of Group IX and the inventions of Groups V-VIII and XX-XXII are unrelated because the products of Group IX are not specifically used or otherwise involved in the processes of Groups V-VIII and XX-XXII.

The inventions of Group XII and the inventions of Groups V-VIII, X, XI, and XXII are unrelated because the products of Group XII are not specifically used or otherwise involved in the processes of Groups V-VIII, X, XI, and XXII.

The inventions of Groups XIII-XIX and the inventions of Groups V-VIII, X, XI, and XX-XXII are unrelated because the products of Groups XIII-XIX are not specifically used or otherwise involved in the processes of Groups V-VIII, X, XI, and XX-XXII.

The inventions of Groups I, II, III, IV, IX, and XII and the inventions of Groups V, VI, VII, VIII, X and XI, and XX and XXI, respectively, are related as products and processes of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the

instant case, the product as claimed, namely the antibody can be used in a materially different process of using that product, such as the process of using the antibody to purify the antigen to which it binds by affinity chromatography.

The inventions of Groups I, II, III, IV, IX, and XII and the inventions of Groups V, VI, VII, VIII, X or XI, and XX or XXI, respectively, have acquired a separate status in the art, as evidenced by their different classifications and/or art-recognized divergence in subject matter, and the search performed in examining claims drawn to a product is a different from the search performed in examining claims drawn to a process using that product. Apart from the searching patent databases using the patent classification of the claimed subject matter, a thorough search of the technical literature is particularly pertinent, and since such a search is performed by a series of key word queries of relevant databases, each search would be performed using a different set or series of key words. Therefore, the search and considerations necessary in examining the merit of claims of Groups I, II, III, IV, IX, and XII would not suffice to provide adequate information regarding the merit of the claims of Groups V, VI, VII, VIII, X or XI, and XX or XXI, respectively, and vice versa, since the searches are not the same, nor are they one coextensive in scope and nature. Because different searches would have to be performed to examine the inventions of Groups I, II, III, IV, IX, and XII and the inventions of Groups V, VI, VII, VIII, X or XI, and XX or XXI, respectively, an examination of both would constitute a serious burden.

Since the inventions of Groups I, II, III, IV, IX, and XII and the inventions of Groups V, VI, VII, VIII, X or XI, and XX or XXI, respectively, have been shown to be patentably distinct, and because the examination of both inventions could not be made without serious burden, it is proper to restrict each from the other. See MPEP § 803.

The inventions of Groups I-IV, IX, and XII-XIX are patentably distinct for the following reasons:

The inventions of Groups I-IV, IX, XII, and XIV-XIX are an antibody or a composition thereof, or a hybridoma that produces the antibody; whereas the invention of Group XIII is a host cell (e.g., *E.coli*) that produces an antibody recombinantly.

Accordingly, any of the inventions of Groups I-IV, IX, XII, and XIV-XIX and the inventions of Group XIII are chemically and biologically distinct products.

Any of the inventions of Groups I-IV, IX, XII, and XIV-XIX and the inventions of Group XIII have acquired a separate status in the art, as evidenced by their different classifications, and the search performed in examining claims drawn to an antibody or a hybridoma producing such an antibody is a different from the search performed in examining claims drawn to, for example, a recombinant bacterial cell that has been transformed with foreign nucleic acids encoding an antibody. Apart from the searching patent databases using the patent classification of the claimed subject matter, a thorough search of the technical literature is particularly pertinent, and since such a search is performed by a series of key word queries of relevant databases, each search would be performed using a different set or series of key words. Therefore, the search and considerations necessary in examining the merit of claims directed to the inventions of any of Groups I-IV, IX, XII, and XIV-XIX would not suffice to provide adequate information regarding the merit of the claims directed to the inventions of Group XIII, and vice versa, since the searches are not the same, nor are they one coextensive in scope and nature. Because different searches would have to be performed to examine the inventions of any of Groups I-IV, IX, XII, and XIV-XIX and the inventions of Group XIII, an examination of both would constitute a serious burden.

Since the inventions of any of Groups I-IV, IX, XII, and XIV-XIX and the inventions of Group XIII are patentably distinct from the other and because the examination of both could not be made without serious burden, it is proper to restrict one from the other. See MPEP § 803.

With regard to the inventions of Groups I-IV, IX, XII, and XIV-XIX, although each of these inventions is an antibody or a composition thereof, or a hybridoma that produces the antibody, each different antibody is characterized by the claims as functionally distinct from the others, and is thus necessarily structurally different from the others as well. For example, the inventions of Groups I, II, III, and IV are antibodies that compete with a different antibody (i.e., antibodies GRP64-18, GRP64-81, GRP64-93, and GRP64-101, respectively) for binding to GRP64. Such antibodies do not

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necessarily bind to the same epitope of GRP64 as any of antibodies GRP64-18, GRP64-81, GRP64-93, and GRP64-101<sup>1</sup>, nor are they necessarily structurally identical to any of these antibodies. In contrast, the inventions of Group IX is an antibody comprising the amino acid sequences of the variable domain of the heavy and/or light chains of monoclonal antibody GRP64-18; and unless it comprises both sequences, it also does not necessarily have the same binding specificity as monoclonal antibody GRP64-18, and may vary structurally from that antibody. The inventions of Group XII, on the other hand, are antibodies that bind any member of a genus of homologous proteins, including but not limited to those that bind GRP64; accordingly, these antibodies do not necessarily bind GRP64 or any epitope thereof, and are therefore expected to vary in both structure and function. In contrast, the inventions of Groups XIV-XVII are antibodies that do bind epitopes of GRP64, albeit different epitopes of the antigen, as they are antibodies that bind the same epitope as that recognized by different antibodies. As explained, because "competing" antibodies do not necessarily bind to the same epitope, but may instead bind an overlapping epitope, none of these antibodies is necessarily the same as any of the antibodies of Groups I, II, III, and IV are antibodies; moreover, as they do not necessarily bind the same epitopes as the antibodies of any of Groups I, II, III, and IV, they are expected to have different structures, as well as different functional properties.

For all of the above reasons, the claims directed to the inventions of Groups I-IV, IX, XII, and XIV-XIX are recognized to encompass widely diverging subject matter, and as such, the search performed in examining claims drawn to any one of the inventions is a different from the search performed in examining claims drawn to any other. Apart from the searching patent databases using the patent classification of the claimed

Notably, antibodies that compete with one another for binding to the same antigen do not necessarily bind the same epitope; rather, an antibody may bind a spatially overlapping epitope and thereby sterically hinder binding of the other ligand to its epitope, or as evidenced by George et al. (*Circulation*. 1998; **97**: 900-906), for example, an antibody may bind an epitope that is distant from, and spatially non-overlapping with the epitope of an antigen recognized by the other antibody, and still interfere with binding of the latter to the antigen; see entire document (e.g., page 903, paragraph bridging columns 1 and 2).

subject matter, a thorough search of the technical literature is particularly pertinent, and since such a search is performed by a series of key word queries of relevant databases, each search would be performed using a different set or series of key words. Therefore, the search and considerations necessary in examining the merit of claims directed to the inventions of any of Groups I-IV, IX, XII, and XIV-XIX would not suffice to provide adequate information regarding the merit of the claims directed to the inventions of any other, and vice versa, since the searches are not the same, nor are they one coextensive in scope and nature. Because different searches would have to be performed to examine the inventions of any of Groups I-IV, IX, XII, and XIV-XIX, an examination of more than one would constitute a serious burden.

Since the inventions of any of Groups I-IV, IX, XII, and XIV-XIX are patentably distinct from the others and because the examination of more than one could not be made without serious burden, it is proper to restrict one from the other. See MPEP § 803.

The inventions of Groups V-VIII, X, XI, and XX-XXII are unrelated, or are otherwise patentably distinct, each from the other, for the following reasons:

The inventions of Groups V-VIII and X are methods for detecting ovarian cancer in a biological sample acquired from a patient, whereas the inventions of Group XI are methods for inhibiting the proliferation of ovarian cancer-associated cells, the inventions of Group XX are methods for inhibiting the growth of tumor cells in mammals, the inventions of Group XXI are methods for diagnosing a tumor, and the inventions of Group XXII are methods for making compositions having high titers of specific antibodies.

Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, and different effects. See MPEP §§ 806.04 and 808.01. The instant specification does not appear to disclose that any of the inventions of Groups V-VIII and X, the inventions of Group XI, the inventions of Group XXI, and the inventions of Group XXII are useable together. Therefore, because any of the inventions of Groups V-VIII and X, the inventions of Group XX, the

inventions of Group XXI, and the inventions of Group XXII have different purposes, the inventions appear unrelated.

If not unrelated, the inventions of any of the inventions of Groups V-VIII and X, the inventions of Group XI, the inventions of Group XXI, the inventions of Group XXI, and the inventions of Group XXIII are patentably distinct, each from the others, for the following reasons:

Again, the inventions of any of the inventions of Groups V-VIII and X, the inventions of Group XI, the inventions of Group XXI, the inventions of Group XXII have different purposes or objectives. Moreover, they are materially different processes comprising different process steps, involving the measurement of different endpoints and the establishment of different correlations, so as to achieve different objectives. Accordingly, the inventions of any of the inventions of Groups V-VIII and X, the inventions of Group XI, the inventions of Group XXI, the inventions of Group XXII have different criteria for success.

Furthermore, although the inventions of Groups V-VIII and X appear related, as they are each a different process for detecting ovarian cancer in a biological sample acquired from a patient, they are nonetheless distinct, each from the others, because they are materially different. More particularly, each is distinct from the others because each comprises contacting a sample with a structurally and/or functionally distinct antibody. The reasons these antibodies are structurally and/or functionally distinct have been set forth in the paragraphs above.

Because any of the inventions of Groups V-VIII and X, the inventions of Group XI, the inventions of Group XXI, the inventions of Group XXII are distinct for these reasons, the search required to examine claims directed to any one of these inventions is not the same, nor is it coextensive with the search required to examine claims directed to any other. Furthermore, the inventions of Groups V-VIII and X, the inventions of Group XI, the inventions of Group XXI, the inventions of Group XXII have acquired a separate status in the art, as evidenced by their different classifications and/or art-recognized

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divergence in subject matter. Because different searches would have to be performed to examine claims directed to the inventions of Groups V-VIII and X, the inventions of Group XI, the inventions of Group XXI, and the inventions of Group XXII, an examination of more than one would constitute a serious burden.

Since the inventions of Groups V-VIII and X, the inventions of Group XI, the inventions of Group XX, the inventions of Group XXI, and the inventions of Group XXII have been shown to be patentably distinct, each from the others, and because the examination of more than one could not be made without serious burden, it is proper to restrict each from the other. See MPEP § 803.

- 5. Because these inventions are distinct for the reasons given above and also because the search required for any one group is not required for any other group and/or the inventions have acquired a separate status in the art as shown by their different classification or their recognized divergent subject matter, searching more than one invention encompassed by the claim would constitute a serious burden; therefore, restriction for examination purposes as indicated is proper.
- 6. Applicant is advised that the reply to this requirement to be complete must include (i) an election of a species or invention to be examined even though the requirement be traversed (37 CFR 1.143) and (ii) identification of the claims encompassing the elected invention.

The election of an invention or species may be made with or without traverse. To reserve a right to petition, the election must be made with traverse. If the reply does not distinctly and specifically point out supposed errors in the restriction requirement, the election shall be treated as an election without traverse.

Should applicant traverse on the ground that the inventions or species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the inventions or species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions

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unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. § 103(a) of the other invention.

7. The examiner has required restriction between product and process claims. Where applicant elects claims directed to the product, and the product claims are subsequently found allowable, withdrawn process claims that depend from or otherwise require all the limitations of the allowable product claim will be considered for rejoinder. All claims directed a nonelected process invention must require all the limitations of an allowable product claim for that process invention to be rejoined.

In the event of rejoinder, the requirement for restriction between the product claims and the rejoined process claims will be withdrawn, and the rejoined process claims will be fully examined for patentability in accordance with 37 CFR 1.104. Thus, to be allowable, the rejoined claims must meet all criteria for patentability including the requirements of 35 U.S.C. 101, 102, 103 and 112. Until all claims to the elected product are found allowable, an otherwise proper restriction requirement between product claims and process claims may be maintained. Withdrawn process claims that are not commensurate in scope with an allowable product claim will not be rejoined. See MPEP § 821.04(b). Additionally, in order to retain the right to rejoinder in accordance with the above policy, applicant is advised that the process claims should be amended during prosecution to require the limitations of the product claims. Failure to do so may result in a loss of the right to rejoinder. Further, note that the prohibition against double patenting rejections of 35 U.S.C. 121 does not apply where the restriction requirement is withdrawn by the examiner before the patent issues. See MPEP § 804.01.

8. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

## Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen L. Rawlings, Ph.D., whose telephone number is (571) 272-0836. The examiner can normally be reached on Monday-Friday, 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Larry Helms, Ph.D. can be reached on (571) 272-0832. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Stephen L. Rawlings, Ph.D.

Examiner Art Unit 1643

slr August 21, 2006